OCEAN GALES AND STORMS, JUNE, 1928

Vessel	Voyage		Position at time of lowest barometer		Gale began	Time of lowest barometer	Gale ended	Lowest barometer	Direction of wind when gale began	Direction and force of wind at time of lowest barometer	Direction of wind when gale ended	Highest force of wind and direction	Shifts of wind near time of lowest barometer
	From—	To—	Latitude	Longitude									
NORTH ATLANTIC OCEAN			° ′	° ′				*Inches*					
Saucon, Am. S. S.	Valencia, Spain.	New York	40 20 N.	18 31 W.	June 2	8p, 3	June 4	29.31	SSW.	WNW., 7	WNW.	SW., 9	SSW. WNW.
Steel Worker, Am. S. S.	New York	Port Said	38 46 N.	24 49 W.	7	7p, 7	8	29.34	S.	SSW., 9	WSW.	—, 9	SSW. WSW.
Sylvafield, Br. M. S.	Canal Zone	Hamburg	48 26 N.	16 14 W.	8	3p, 8	9	28.74	ENE.	NE., 9	N.	N., 9	NE. NNW.
Abercos, Am. S. S.	London	Galveston	49 20 N.	8 32 W.	8	11a, 9	10	29.09	S.	S., 10	SW.	S., 10	Steady.
Hamburg, Ger. S. S.	Channel	New York	43 47 N.	42 25 W.	14	8a, 14	15	29.45	SE.	SSE., 8	NW.	SSE., 10	SE. SSW.
Nieuw Amsterdam, Du. 08. S.	Rotterdam	do	41 41 N.	46 18 W.	15	3a, 15	15	29.40	WNW.	NW., 7	NW.	WNW., 9	
Arminco, Belg. S. S.	Port Arthur	Mediterranean.	37 50 N.	30 09 W.	15	11p, 15	16	29.84	S.	SSW., 8	WSW.	S., 9	S. WSW.
Mercer, Am. S. S.	Rotterdam	New York	47 15 N.	31 00 W.	20	9p, 20	21	29.66	WSW.	—, 9	W.	WNW., 10	WSW. W.
Gonzenheim, Ger. S. S.	Emden	Portland, Me.	50 00 N.	22 10 W.	20	4p, 20	22	29.25	S.	S., 7	SW.	W., 10	
Rathlin Head, Br. S. S.	Bremen	Montreal	58 44 N.	19 30 W.	22	—, 22	22	29.29	WNW.	NNW., 9	NW.	—, 9	
Lubrafol, Belg. S. S.	Port Arthur	Hamburg	48 37 N.	19 45 W.	24	2p, 24	25	29.59	SE.	SE., 10	SW.	S., 10	SE. S. W.
Columbus, Ger. S. S.	Plymouth	New York	49 45 N.	11 17 W.	25	4p, 25	26	29.48	S.	W., 8	NNW.	NW., 10	SW. WNW.
Gulfking, Am. S. S.	Beverly, Mass	Port Arthur	38 00 N.	70 51 W.	30	4a, 30	30	29.84	SSW.	SSW., 8	SW.	—, 9	Steady.
NORTH PACIFIC OCEAN													
Hayo Maru, Jap. S. S.	Muroran	Vancouver	44 29 N.	150 34 E.	4	4p, 4	5	29.54	NNE.	N., 8	NNW.	N., 9	NNE.-N.
California, Am. S. S.	Portland	Aomori, Japan	51 05 N.	178 40 W.	4	8p, 5	5	29.22	S.	SSE., 7	SSE.	SSE., 9	Steady.
Nora, Am. S. S.	San Pedro	Balboa	13 45 N.	95 14 W.	5	Noon	5	29.67	NE.	S., —	SW.	SE., 10	NE.-SE.-SW.
Eldridge, Am. S. S.	Philippines	Puget Sound	19 30 N.	127 18 E.	13	8p, 13	13	29.50	NW.	NW., 5	WNW.	NW., 8	NW.-SW.
Calmar, Am. S. S.	San Pedro	Balboa	17 06 N.	100 26 W.	16	9a, 16	17	29.65	ESE.	ESE., 7	SW.	SW., 8	ESE.-SW.
Canadian Miller, Br. S. S.	Union Bay	Panama	19 04 N.	105 13 W.	17	Noon	17	29.68	SE.	SE.	E.	SE., 8	SE.-E.
Crosskeys, Am. S. S.	Dairen	San Francisco	45 25 N.	172 15 W.	22	8a, 23	23	29.03	NE.	S., 6	S.	NE., 9	
Silvercedar, Br. M. S.	Philippines	do	41 54 N.	167 18 W.	22	Noon, 22	23	29.57	ESE.	SSW., 8	SSW.	SSW., 9	Steady.
Pacific Commerce, Br. M. S.	Yokohama	Portland	40 56 N.	152 40 E.	25	8a, 26	26	29.23	ENE.	NNW., 9	NW.	NNW., 9	ENE.-NNW.
Akibasan Maru, Jap. S. S.	do	San Francisco	48 00 N.	177 45 W.	28	Noon, 28	29	29.51	ESE.	ENE., 9	NE.	NE., 9	
SOUTH PACIFIC OCEAN													
Sonoma, Am. S. S.	San Francisco	Sydney	33 25 S.	152 00 E.	14	—, 14		29.24	SSE.	SSE., 11			Steady.

NORTH PACIFIC OCEAN

By WILLIS E. HURD

The center of the Aleutian cyclone, which had been situated for several months over the northwestern waters of the Gulf of Alaska, drifted to the westward, and in June lay over the middle Aleutians, lowest average pressure 29.80 inches, at Dutch Harbor. Over most of the region usually more or less subject to the influence of this great depression, the barometric average this month was practically normal, except at Dutch Harbor, where it was a fifth of an inch below.

The North Pacific anticyclone was stable and highly developed throughout the month, central near 40° N., 145° W.

Pressure data for several island and American coast stations in west longitudes are given in the following table:

TABLE 1.—*Averages, departures, and extremes of atmospheric pressure at sea level at indicated hours, North Pacific Ocean, June, 1928*

Stations	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	*Inch*	*Inches*		*Inches*	
Dutch Harbor [1]	29.80	−0.19	30.28	26th	29.06	24th.
St. Paul [1 2]	29.86	−0.03	30.36	28th	29.24	24th.
Kodiak [1]	29.91	−0.03	30.36	6th [6]	29.54	24th.
Midway Island [1 3]	30.03	−0.04	30.28	2d	29.72	7th.
Honolulu [4]	30.01	−0.03	30.09	9th	29.87	6th.
Juneau [4]	30.03	+0.02	30.27	7th	29.73	11th.
Tatoosh Island [4 5]	30.02	−0.03	30.23	5th	29.76	20th.
San Francisco [4 5]	29.90	−0.06	30.03	14th	29.64	18th.
San Diego [4 5]	29.87	−0.02	29.96	12th	29.73	17th.

[1] P. m. observations only.
[2] For 29 days.
[3] For 27 days.
[4] A. m. and p. m. observations.
[5] Corrected to 24-hour mean.
[6] And on other date.

Although fewer gales, exceeding force 8, occurred in June than in May, yet the number of days with gales increased, especially over the middle portion of the upper steamship routes, owing to the unusual energy, for the season, of the cyclone over the central Aleutians. Most of the gales, however, were of a very moderate character, only a small number exceeding 8 in force, and none of them exceeding force 10. Moderate gales occurred along the California and Oregon coasts on the 12th, 17th, and 18th, due to intensification of the gradients existing there between the oceanic anticyclone and the low-pressure region over the continent.

Several depressions, or cyclones, of no great energy, some tropical and others of continental origin, appeared over the waters of the Far East. A few were accompanied by local gales of force 8 or 9 between Japan and longitude 160° E., and one caused a moderate northwesterly gale northeast of Luzon on the 13th. Otherwise so far as known none was productive of high winds.

The severest gale reported for the entire ocean occurred south of the Gulf of Tehuantepec on the 5th. Mr. B. Vieda, second officer and observer of the American steamer *Nora*, which encountered this wind, said of it that at 11 a. m. it "reached force 10 and kept hauling from northeast to east to southeast to south at the same force until 1:30 p. m. Heavy rain and large rough sea during the blow." The barometer at the time read 29.67 inches, which showed a depression of about two-tenths of an inch from earlier and following readings, showing that a cyclonic disturbance was at hand. Other gales, but of a more moderate character, produced by active depressions off the Mexican coast, occurred between Salina Cruz and Manzanillo on the 17th, 18th, and 25th.

Concerning the weather off this coast, Mr. J. L. Kilburn, second officer and observer of the British freighter *General Smuts*, makes the following comment:

> From the 13th to 18th June a heavy confused swell running from a southwest to northwest direction was encountered, wind SW./WSW., force 4–6, barometer 29.70–29.80; overcast, with frequent squalls of torrential rain. This is the first time we have encountered this weather on this track—a comparatively moderate wind, steady in direction, accompanied by such a short, heavy, confused swell of such long duration and covering so big an area (3½° N.–16½° N. lat., 89° W.–103° W. lon.).

The northeast trades were steady throughout the month. At Honolulu the prevailing direction was from the east, the maximum velocity being at the rate of 22 miles an hour, from the east, on the 18th.

Fog was frequent and had increased slightly in the number of days of occurrence since May over the west-